

~~DET/assgt/ITC/~~
* * 08/324001
* *

08/324001

(FILE 'USFAT' ENTERED AT 14:43:14 ON 10 JAN 95)

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L1          SET PAG SCR
138186 S PROMOT?
          SET HIG ON
L2          2 S POL(W) III
L3          40 S POLYMERASE(W) III
L4          40 S L2 OR L3

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L6      12 S ARNA
L7      103 S ANTISENSE (W) RNA
L8      55 S ANTI (W) SENSE (W) RNA
L9      114 S L6 OR L7
L10     146 S L6 OR L7 OR L8
L11     114 S L1 AND L10
L12     6 S L4 AND L11
L13     1167 S U6
L14     276 S U(W)6
L15     0 S 7SK
L16     21 S 7(W)SK
L17     0 S H1RNA
L18     1 S H1(W)RNA
L19     2481 S U3
L20     689 S U(W)3
L21     139 S MRP
L22     1454 S L13 OR L14 OR L15 OR L16
L23     2482 S L17 OR L18 OR L19
L24     827 S L20 OR L21
L25     3701 S L22 OR L23 OR L24
L26     298 S L1 AND L25
L27     2 S L10 AND L26

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=> d his

(FILE 'USPAT' ENTERED AT 14:43:14 ON 10 JAN 95)

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      SET PAG SCR
L1      138186 S PROMOT?
      SET HIG ON
L2      2 S POL(W)III
L3      40 S POLYMERASE(W)III
L4      40 S L2 OR L3
L5      33 S L1 AND L4
L6      12 S ARNA
L7      103 S ANTISENSE (W) RNA
L8      55 S ANTI (W) SENSE (W) RNA
L9      114 S L6 OR L7
L10     146 S L6 OR L7 OR L8
L11     114 S L1 AND L10
L12     6 S L4 AND L11
L13     1167 S U6
L14     276 S U(W)6
L15     0 S 7SK
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L17     0 S H1RNA
L18     1 S H1(W)RNA
L19     2481 S U3
L20     689 S U(W)3
L21     139 S MRP
L22     1454 S L13 OR L14 OR L15 OR L16
L23     2482 S L17 OR L18 OR L19
L24     827 S L20 OR L21
L25     3701 S L22 OR L23 OR L24
L26     298 S L1 AND L25
L27     2 S L10 AND L26
      SET PAG 24
L28     1 S L12 AND L27
L29     7 S L12 OR L27
      SET PAG SCR

```

=> 'Displayed L12 1-6 kwic w/o pr.
' 'DISPLAYED' IS NOT A RECOGNIZED COMMAND

=> 'Displayed L27 1-2 kwic w/o pr.
' 'DISPLAYED' IS NOT A RECOGNIZED COMMAND

=> d 112 2,3 cit fd rel

2. 5,354,854, Oct. 11, 1994, Expression system for use in plants to suppress foreign expression and method; June E. Bourque, et al., 536/23.1, 24.1 [IMAGE AVAILABLE]

US PAT NO: 5,354,854 [IMAGE AVAILABLE]
DATE FILED: Nov. 7, 1991

L12: 2 of 6

3. 5,324,643, Jun. 28, 1994, Method of conferring resistance to retroviral infection; Wilson Greatbatch, et al., 435/91.32, 91.1, 91.3, 172.3, 240.1, 240.2; 536/23.1; 935/3, 6, 34, 70 [IMAGE AVAILABLE]

US PAT NO: 5,324,643 [IMAGE AVAILABLE]
DATE FILED: Jul. 29, 1991

L12: 3 of 6

REL-US-DATA: Continuation-in-part of Ser. No. 156,188, Feb. 16, 1988, abandoned.

=> file jp

FILE 'JPOABS' ENTERED AT 15:05:38 ON 10 JAN 95

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* * * * *
*   J A P A N E S E   P A T E N T   A B S T R A C T S   *
*
* CURRENTLY, DATA IS LOADED THROUGH THE ABSTRACT PUBLICATION *
* DATE OF DECEMBER 31, 1993 *
* THE LATEST GROUPS RECEIVED ARE: C1141 E1473, M1526 & P1652. *
* * * * *
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=> d his

(FILE 'USPAT' ENTERED AT 14:43:14 ON 10 JAN 95)

```
      SET PAG SCR
L1      138186 S PROMOT?
      SET HIG ON
L2      2 S POL(W)III
L3      40 S POLYMERASE(W)III
L4      40 S L2 OR L3
L5      33 S L1 AND L4
L6      12 S ARNA
L7      103 S ANTISENSE(W)RNA
L8      55 S ANTI(W)SENSE(W)RNA
L9      114 S L6 OR L7
L10     146 S L6 OR L7 OR L8
L11     114 S L1 AND L10
L12     6 S L4 AND L11
L13     1167 S U6
L14     276 S U(W)6
L15     0 S 7SK
L16     21 S 7(W)SK
L17     0 S H1RNA
L18     1 S H1(W)RNA
L19     2481 S U3
L20     689 S U(W)3
L21     139 S MRP
L22     1454 S L13 OR L14 OR L15 OR L16
L23     2482 S L17 OR L18 OR L19
L24     827 S L20 OR L21
L25     3701 S L22 OR L23 OR L24
L26     298 S L1 AND L25
L27     2 S L10 AND L26
      SET PAG 24
L28     1 S L12 AND L27
L29     7 S L12 OR L27
```

FILE 'JFOABS' ENTERED AT 15:05:38 ON 10 JAN 95

SET HIG ON

L30 1 S POL(W)III
L31 2 S POLYMERASE(W)III
L32 2 S L30 OR L31
L33 0 S ARNA
L34 9 S ANTISENSE
L35 8 S ANTI(W)SENSE
L36 16 S L33 OR L34 OR L35
L37 0 S L32 AND L36
L38 19 S U6
L39 5 S U(W)6
L40 0 S 7SK
L41 0 S 7(W)SK
L42 0 S H1RNA
L43 0 S H1(W)RNA
L44 123 S U3
L45 18 S U(W)3
L46 27 S MRP
L47 185 S L38 OR L39 OR L44 OR L45 OR L46
L48 21278 S PROMOT?
L49 3 S L47 AND L48
L50 0 S L32 AND L49

=> lgo y
'LGO' IS NOT A RECOGNIZED COMMAND

=> log y
U.S. Patent & Trademark Office LOGOFF AT 15:11:39 ON 10 JAN 95

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Refusé 94/11616

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(FILE 'HOME' ENTERED AT 15:23:51 ON 10 JAN 95)

FILE 'CA' ENTERED AT 15:23:59 ON 10 JAN 95

L1 129 S (POL(W)III)/BI,AB
L2 1496 S (POLYMERASE(W)III)/BI,AB
L3 1529 S L1 OR L2
L4 19 S ARNA/BI,AB
L5 87 S (ANTI(W)SENSE(W)RNA)/BI,AB
L6 1067 S (ANTISENSE(W)RNA)/BI,AB
L7 1126 S L4 OR L5 OR L6
L8 9 S L3 AND L7

=> d 18 1-9 bib ab

L8 ANSWER 1 OF 9 CA COPYRIGHT 1995 ACS
AN 121:271382 CA
TI Reduction in replication of the human immunodeficiency virus type 1
in human T cell lines by ***polymerase*** ***III*** -driven
transcription of chimeric tRNA- ***antisense*** ***RNA***
genes
AU Junker, Uwe; Rittner, Karola; Homann, Matthias; Bevec, Dorian;
Bohnelein, Ernst; Sczakiel, Georg
CS Wien, Austria
SO Antisense Res. Dev. (1994), 4(3), 165-72
CODEN: AREDEI; ISSN: 1050-5261
DT Journal
LA English
AB Inhibition of human immunodeficiency virus type 1 (HIV-1)
replication was demonstrated by using tat- and rev-directed
antisense oligoribonucleotides 68 and 69 nucleotides in length. In
this study, human T-lymphoid cells were transduced with a murine
amphotropic retroviral vector contg. a ***polymerase***
III -driven chimeric gene consisting of the human tRNAimet
sequence and the short tat- and rev-directed antisense sequences
that had been shown before to inhibit HIV-1 replication. Pools of
transduced, G418-resistant human T-lymphoid Jurkat or CEM cells
showed reduced replication of HIV-1 in the presence of
antisense-contg. chimeric transcripts, but not with sense
sequence-contg. transcripts. These results demonstrate that short
inhibitory ***antisense*** ***RNA*** transcripts can be
stably expressed endogenously using ***polymerase*** ***III***
promoters, which can reduce replication of HIV-1. The approach
described in this work combines the advantages of short and,
usually, synthetic oligonucleotides with the stable intracellular
expression of inhibitory genes for HIV-1 in target cells.
Considering the small size of the described chimeric
polymerase ***III*** genes, it appears feasible to
combine multiple antiviral genes with the currently available
retroviral vectors as gene delivery systems.

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L8 ANSWER 2 OF 9 CA COPYRIGHT 1995 ACS
AN 120:2271 CA
TI Vectors containing a modified viral gene transcribed by RNA
polymerase ***III*** , production of ***antisense***
RNA or ribozyme with the vector, and control of pathogens
with said vector or RNA
IN Doglio, Alain; Lefebvre, Jean Claude; Cagnon, Laurence
PA University de Nice, Fr.
SO Fr. Demande, 29 pp.

PI FR 2687411 A1 930820
AI FR 92-1608 920213
DT Patent
LA French
AB DNA vectors encoding anti-pathogen ***antisense*** ***RNA***
or ribozyme are described. The DNA sequence encoding the
anti-pathogen RNA is inserted between or adjacent to boxes A and B
of a viral gene promoter. The vector can be used in treatment of
microbial or viral infections. Vectors contg. DNA encoding
antisense ***RNA*** to HIV tat or rev nucleic acids
inserted between boxes A and B of the adenovirus VIA gene were
prepd. HIV-1 replication was inhibited in CEM or MOLT-4 cells
transfected with these vectors.

L8 ANSWER 3 OF 9 CA COPYRIGHT 1995 ACS
AN 117:84331 CA
TI Suppression of gene expression in plant cells utilizing antisense
sequences transcribed by RNA ***polymerase*** ***III***
AU Bourque, June E.; Folk, William R.
CS Dep. Biochem., Univ. Missouri, Columbia, MO, 65211, USA #2
SO Plant Mol. Biol. (1992), 19(4), 641-7
CODEN: PMBIDB; ISSN: 0167-4412
DT Journal
LA English
AB Inverted sequences of the chloramphenicol acetyltransferase (CAT)
reporter gene were fused to a soybean tRNAm^{eti} gene lacking a
terminator such that the tRNAm^{eti} sequences caused the
co-transcription of CAT antisense sequences by RNA
polymerase ***III***. When electroporated into carrot
protoplasts, these antisense DNA constructs suppressed CAT enzyme
activity expressed from co-electroporated DNAs contg. the CAT gene
downstream of the cauliflower mosaic virus (CaMV) 35S RNA promoter.
The most effective construct, an antisense sequence complementary to
the 3' portion of the CAT gene, inhibited CAT activity five-fold
greater than an antisense construct expressed by RNA polymerase II
from the cauliflower mosaic virus 35S RNA promoter. These results
indicate that antisense sequences transcribed by RNA
polymerase ***III*** should efficiently suppress gene
expression in plants.

L8 ANSWER 4 OF 9 CA COPYRIGHT 1995 ACS
AN 117:2159 CA
TI Inhibition of adenovirus replication by the E1A antisense transcript
initiated from hsp70 and VA-1 promoters
AU Miroshnichenko, O. J.; Borisenko, A. S.; Ponomareva, T. I.;
Tikhonenko, T. I.
CS Inst. Agric. Biotechnol., Moscow, 127253, Russia
SO Biomed. Sci. (London) (1990), 1(3), 267-73 #3
CODEN: BSCHE4; ISSN: 0955-9701
DT Journal
LA English
AB The E1A region of the adenoviral genome, important for initiation of
virus infection and activation of other viral genes, was chosen as a
target for engineering ***antisense*** ***RNA*** (asRNA) to
inhibit adenovirus 5 (Ad5) replication in COS-1 cell culture in
vitro. The hsp70 promoter, taken from the appropriate
heat-shock-protein gene of Drosophila melanogaster, and the VA-1 RNA
promoter, derived from the Ad5 gene coding for low-mol.-mass VA-1
RNA and recognized by RNA ***polymerase*** ***III***, were
used as regulatory elements of transcription. The two types of
recombinant constructs contained E1A fragments of 710 bp (hsp70
constructs) or 380 or 740 bp (VA-1 RNA constructs) in reverse
orientation relative to the promoter position, as well as a
transcription termination signal, the SV40 ori, and the gene
controlling Geneticin (antibiotic G418) resistance (G418R). After

selection of transfectable COS-1 cells in the presence of LMO, a no. of stable G418R cell lines were raised which expressed engineered asRNAs. Plating of Ad5 suspensions of known titer on monolayers of transfected COS-1 cells clearly showed strong inhibition of adenovirus replication by asRNAs: 75% with the hps70 promoter and 90% with the VA-1 RNA promoter.

LB ANSWER 5 OF 9 CA COPYRIGHT 1995 ACS

AN 114:242082 CA

TI Genetic construct for inhibiting RNA function

IN Beug, Hartmut; Birnstiel, Max L.; Cotten, Matthew; Wagner, Ernst; Kandolf, Harald

PA Boehringer Ingelheim International G.m.b.H., Fed. Rep. Ger.

SO Eur. Pat. Appl., 36 pp.

CODEN: EPXXDW

PI EP 387775 A1 900919

DS R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE

AI EP 90-104701 900313

PRAI AT 89-609 890316

DT Patent

LA German

AB A genetic construct for inhibiting RNA function comprises a ***polymerase*** ***III*** transcription unit contg. DNA which encodes an RNA-inhibiting RNA. A plasmid contg. the gene for methionine initiator tRNA of Xenopus was constructed. Into the ApaI site between the A and B boxes of the regulatory region, DNA encoding a ribozyme flanked by RNA complementary to U7 snRNA or erbB mRNA was inserted. This plasmid was introduced into chicken erythroblasts complexed to a polylysine-transferrin conjugate. In the transformants, the target RNA was cleaved. The efficiency of cleavage was not affected by incorporation of the ribozyme into the tRNA structure, and the ribozyme was stabilized by its inclusion in the tRNA mol. Similar activity and stability were obtained when the ribozyme encoding sequence was incorporated into the intron of a tRNA gene.

LB ANSWER 6 OF 9 CA COPYRIGHT 1995 ACS

AN 114:222638 CA

TI The rodent B2 sequence can affect expression when present in the transcribed region of a reporter gene

AU Bladon, Trevor S.; McBurney, Michael W.

CS Dep. Med., Univ. Ottawa, Ottawa, ON, K1H 8M5, Can.

SO Gene (1991), 98(2), 259-63

CODEN: GENED6; ISSN: 0378-1119

DT Journal

LA English

AB The mouse B2 element is a moderately repetitive nt sequence of 180 bp transcribed by RNA ***polymerase*** ***III*** (***Pol*** ***III***) at high levels in embryonic and transformed cells. The B2 sequence is present in either orientation within the noncoding regions of a no. of genes transcribed by RNA polymerase II (Pol II). To det. if the small B2 transcripts generated by ***Pol*** ***III*** are natural ***antisense*** ***RNA*** mols. which might hybridize to complementary sequences present within Pol II transcripts, chimaeric reporter genes encoding Escherichia coli gpt were constructed contg. a B2 repeat in either orientation within the 5'- or 3'-untranslated regions. These constructs were transfected into embryonal carcinoma (EC) cells and expression of the reporter gene was analyzed in EC cells and retinoic acid-treated EC cells, which contain high and low levels of small B2 RNAs, resp. Although the B2 sequences affected expression of the reporter gene, these effects did not appear to be due to hybridization of the small B2 RNA to the reporter transcripts. The presence of B2 sequences near a Pol II-transcribed gene can alter expression of that gene in a position- and orientation-dependent manner, suggesting these repetitive elements

L8 ANSWER 7 OF 9 CA COPYRIGHT 1995 ACS
 AN 114:75955 CA
 TI Expression of chimeric tRNA-driven antisense transcripts renders NIH 3T3 cells highly resistant to Moloney murine leukemia virus replication
 AU Sullenger, Bruce A.; Lee, Thomas C.; Smith, Clayton A.; Ungers, Grace E.; Gilboa, Eli #5
 CS Bone Marrow Transplant Serv., Mem. Sloan-Kettering Cancer Cent., New York, NY, 10021, USA
 SO Mol. Cell. Biol. (1990), 10(12), 6512-23
 CODEN: MCEBD4; ISSN: 0270-7306
 DT Journal
 LA English
 AB NIH 3T3 cells infected with Moloney murine leukemia virus (MoMLV) express high levels of virus-specific RNA. To inhibit replication of the virus, chimeric tRNA genes encoding antisense templates were stably introduced into NIH 3T3 cells via a retroviral vector. Efficient expression of hybrid tRNA-MoMLV antisense transcripts and inhibition of MoMLV replication were dependent on the use of a particular type of retroviral vector, the double-copy vector, in which the chimeric tRNA gene was inserted in the 3' long terminal repeat. MoMLV replication was inhibited up to 97% in cells expressing ***antisense*** ***RNA*** corresponding to the gag gene and less than 2-fold in cells expressing ***antisense*** ***RNA*** corresponding to the pol gene. RNA and protein analyses suggest that inhibition was exerted at the level of translation. These results suggest that RNA ***polymerase*** ***III***-based antisense inhibition systems can be used to inhibit highly expressed viral genes and render cells resistant to viral replication via intracellular immunization strategies.

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L8 ANSWER 8 OF 9 CA COPYRIGHT 1995 ACS
 AN 113:92458 CA
 TI Silkmoth chorion ***antisense*** ***RNA*** . Structural characterization, developmental regulation and evolutionary conservation
 AU Skeiky, Yasir A. W.; Iatrou, Kostas
 CS Fac. Med., Univ. Calgary, Calgary, AB, T2N 4N1, Can.
 SO J. Mol. Biol. (1990), 213(1), 53-66
 CODEN: JMOBAK; ISSN: 0022-2836
 DT Journal
 LA English
 AB Choriogenic follicular cells of the silkmoth Bombyx mori contain significant quantities of ***antisense*** ***RNA*** transcribed from chorion genes. ***Antisense*** ***RNA*** derived from a chorion gene with a high content of cysteine, HcB.12, was characterized in detail. The antisense transcripts are initiated downstream from the 3' end of HcB.12 mRNA and extend over 75% of the length of the gene, comprising its entire second exon and part of its intervening sequence. The ***antisense*** ***RNA*** is devoid of any significant open reading frames and is not polyadenylated. These features, combined with the presence of specific sequence motifs within its transcribed and upstream region, suggest that ***antisense*** ***RNA*** may be transcribed by RNA ***polymerase*** ***III*** . Chorion ***antisense*** ***RNA*** is detectable only in choriogenic follicular cells and appears to be coordinately regulated with chorion mRNA. Its cytoplasmic accumulation during choriogenesis parallels that of the corresponding mRNA. Although chorion mRNA is at least 5 times more abundant than ***antisense*** ***RNA*** , the latter is present as a single-stranded entity in follicular cytoplasm but can form perfect duplexes with its mRNA complement upon annealing in vitro. The possible involvement of ***antisense*** ***RNA*** transcription in the pathway that controls the programmed expression

ON ENO10L genes at the level of transcription initiation. O.
post-transcriptional processing is discussed.

LB ANSWER 9 OF 9 CA COPYRIGHT 1995 ACS
AN 107:212659 CA
TI Inhibition of SV40 replicon function by engineered ***antisense***
RNA transcribed by RNA ***polymerase*** ***III***
AU Jennings, P. A.; Molloy, P. L.
CS Div. Mol. Biol., CSIRO, North Ryde, 2113, Australia
SO EMBO J. (1987), 6(10), 3043-7
CODEN: EMJODG; ISSN: 0261-4189
DT Journal
LA English
AB Promoters recognized by RNA ***polymerase*** ***III*** were
used to direct synthesis of RNAs of opposite polarity to the 5' end
of the mRNA for the large T-antigen of SV40. A construct was made
utilizing the adenovirus (human type II) VA1 gene promoter linked to
163 bp of SV40 DNA sequences cloned in antisense orientation
relative to the promoter. The SV40 sequence corresponds to the 5'
end of the large T-antigen gene. In addn. to the antisense
constructs, control plasmids were utilized which either lacked both
promoter and SV40 elements, lacked RNA ***polymerase***
III promoter elements but contained SV40 sequences, or
contained the VA1 gene promoter fused to SV40 sequences in the sense
orientation. The function of the various gene fusions was
demonstrated in an in vitro transcription system and in vivo by S1
nuclease 5' end mapping following transfection into COS1 cells.
Cotransfection of COS1 cells with the antisense gene and a plasmid
contg. an SV40 origin of replication resulted in a substantial
transient inhibition of SV40-replicon function when compared to
control detns. (50% to nearly complete inhibition of large T-antigen
dependent DNA replication for 18-36 h). These results show that an
antisense ***RNA*** generated by RNA ***polymerase***
III can effectively block expression of a chromosomally
located gene.

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(FILE 'HOME' ENTERED AT 15:23:51 ON 10 JAN 95)

FILE 'CA' ENTERED AT 15:23:59 ON 10 JAN 95

L1 129 S (POL(W)III)/BI,AB
L2 1496 S (POLYMERASE(W)III)/BI,AB
L3 1529 S L1 OR L2
L4 19 S ARNA/BI,AB
L5 87 S (ANTI(W)SENSE(W)RNA)/BI,AB
L6 1067 S (ANTISENSE(W)RNA)/BI,AB
L7 1126 S L4 OR L5 OR L6
L8 9 S L3 AND L7
L9 1014 S U6/BI,AB
L10 384 S (U(W)6)/BI,AB
L11 35 S 7SK/BI,AB
L12 6 S (7(W)SK)/BI,AB
L13 0 S H1RNA/BI,AB
L14 20 S (H1(W)RNA)/BI,AB
L15 1181 S U3/BI,AB
L16 661 S (U(W)3)/BI,AB
L17 320 S MRP
L18 320 S MRP/BI,AB
L19 1373 S L9 OR L10 OR L11 OR L12 OR L13
L20 2126 S L14 OR L15 OR L16 OR L17 OR L18
L21 3432 S L19 OR L20
L22 146539 S PROMOT?/BI,AB
L23 243 S L21 AND L22
L24 1 S L7 AND L23

L24 ANSWER 1 OF 1 CA COPYRIGHT 1995 ACS
 AN 121:292778 CA
 TI Expression constructs containing HIV inhibiting antisense sequences
 and their delivery by traditional means or using retrovirus
 expression vectors
 IN Pyati, Jagdeesh
 PA Ortho Pharmaceutical Corp., USA
 SO Eur. Pat. Appl., 33 pp.
 CODEN: EPXXDW
 PI EP 612844 A2 940831
 DS R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT,
 SE
 AI EP 94-301315 940224
 PRAI US 93-21936 930225
 US 94-190350 940201
 DT Patent
 LA English
 AB Antisense nucleotides that inhibit replication of human
 immunodeficiency virus are described for use in the treatment and
 prophylaxis of AIDS. The constructs are administered to the patient
 by traditional pharm. methods, or through the use of recombinant
 retrovirus delivery systems. The retrovirus delivery systems may be
 target-specific. Such targeting is accomplished by modifying the
 envelope of the retrovirus to contain sequences for which a receptor
 or ligand exists on the target. The construction of a no. of
 antisense expression vectors is demonstrated. Two of these vectors
 were packaged using an amphotropic cell line and the virus used to
 infect a T-lymphoblastoid cell line. The cells were shown to
 transcribe the antisense message and were 75-80% resistant to
 challenge with HIV-1.

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
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CA SUBSCRIBER PRICE	-4.20	-4.20

STN INTERNATIONAL LOGOFF AT 15:30:33 ON 10 JAN 95

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